REMARKS

In response to the Office Action mailed June 7, 2007 and the Advisory Action mailed August 16, 2007, Applicants request reconsideration of this application in view of these remarks and amendments.

Claims 10, 15, and 23 are amended. New claims 24-31 are presented. Claims 10-17 and 23-31 are now pending. Claims 1-9 and 18-22 are withdrawn.

I. The Final Office Action is Incomplete and is Clearly Erroneous Because it Does not Make a Prima Facie Case of Unpatentability

Regarding the rejections under 35 U.S.C. § 103 of claims 10-17, and 23, independent claim 10 recites: "wherein said nanoparticles are comprised of said second monomer units and said first monomer units, in a ratio of said second monomer units to said first monomer units greater than 1:1." Both the Final Office Action and the Advisory Action completely fail to address the limitation of "a ratio of said second monomer units to said first monomer units greater than 1:1." Therefore, the rejection does not establish a *prima facie* case of obviousness, which requires that the references much teach or suggest all the claim limitations.

Furthermore, the claim rejections set forth in the Final Office Action fail to satisfy 37 C.F.R. Section 1.104(b) Completeness of Examiner's Action which states "the examiner's action will be complete as to all matters..." *See also*, MPEP 2131.01 ("To anticipate a claim, the reference must teach every element of the claim.") and 37 C.F.R. Section 1.104(c)(2) ("The pertinence of each reference, if not apparent, must be clearly explained and each rejected claim specified."). Applicants submit that these rejections are therefore improper and must be withdrawn.

Accordingly, Applicants request that the rejections be withdrawn and the case be passed to issue or at least that a new non-final office action be issued that is complete and addresses this limitation of the claims.

II. Amended Claim 10 and its Dependent Claims are Patentable over the Prior Art

Claim 10 is amended to state that the nanoparticles have "a polydispersity index between about 1.5 and 10." This amendment is supported by the specification, at least, on page 3, lines 13-14.

Neither Krom (U.S. 6,437,050), Wang '785 (U.S. 6,872,785), nor Wang '469 (U.S. 6,689,469) disclose the claimed polydispersity index. In fact, these references disclose that the "[n]ano-particles preferably are monodisperse in size and uniform in shape." (Krom, Col. 1: Lines 18-19; *see also* Col. 2: Line 11; Wang '785, Col. 1: Lines 30-31; *see also* Col. 3: Lines 3-6; *see also* Wang '469 Col. 2: Lines 45-46.)

Demirors (U.S. 6,441,090) also does not disclose the claimed polydispersity index. While Demirors discloses a bimodal particle size distribution in a monovinylidene aromatic polymer, it does not disclose any Mw/Mn ratios.

Additionally, there is no reason to combine Krom or the Wang references with Demirors. The disclosure quoted above, that the nanoparticles of Krom and the Wang references are preferably monodisperse, clearly teaches away from combining Krom or the Wang references with the bimodal particle size distribution of Demirors.

Furthermore, in contrast to the allegations of the Final Office Action, and as argued in Applicants' previous response, Demirors discloses particles that are significantly different than those disclosed in Krom and the Wang references, as evidenced by the process by which the particles are made[1] and the properties of the polymer compositions.[2] Applicants continue to strenuously assert these arguments.

While the Advisory Action noted that there are no process limitations in the pending claims, this is irrelevant to Applicant's argument. The fact that the references use different processes to make different types of particles is probative of the issue of whether one of skill in the art would be motivated to combine the references, regardless of whether there are process limitations in the claims.

In summary, independent claim 10 and its dependent claims 11-17 and 23 are patentable over the cited prior art. None of the references discloses the amended polydispersity index. Furthermore, Applicants continue to stress that there is no motivation to combine the references. One of skill in the art would not be motivated to combine the polymodal aspect of Demirors with the inventions disclosed in Krom or Wang '785, which prefer monomodal dispersity, use a different process, and obtain an end product with different properties. Therefore, Applicants submit that claims 10-17 and 23 are also patentable over the cited prior art for this reason.

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[1] Demirors polymerizes by using a feed of the desired components and a grafting initiator in a series of reactors (Demirors Col. 4, Lines 50-53). The smaller particles are formed in a first reactor, and then transferred to a second reactor, wherein larger particles are formed by controlling the "agitation and solids content in the second reactor." (Col. 5. Lines 1-3.) Polymerization is done by grafting polymer to rubber particle (Col 5, Lines 6-8) with initiators such as peroxides or photochemical techniques (Col 5, Lines 4-20). Krom and Wang '785 disclose an anionic, micellar, self-assembly polymerization process that is quite different from that disclosed in Demirors.

[2] The specification of Krom is primarily directed to improving tensile strength and tear strength primarily in rubber compositions (Krom, Col. 6, Lines 64-67), and Wang '785 is directed to improving hysteresis, tensile strength, tear strength, resistance to creep, resistance to termperature, and aging properties. (Wang '785, Col. 2, Lines 23-26.) In contrast, Demirors is directed to improving impact strength and gloss in injection molding and extrusion applications (Col. 2: lines 20-24) such as HIPS or ABS (Col. 6, lines 7-44).

III. Response to Double Patenting Rejections

Claims 10-17 and 23 were rejected for non-statutory Double Patenting over the combination of Wang '785 in view of Demirors. The arguments stated above apply with equal force against this rejection, *i.e.* the Office Action does not address all the claim limitations, the claims are patentable over the prior art, and there is no motivation to combine Demirors with Wang '785.

IV. New Claims 24-31 are Patentable over the Prior Art

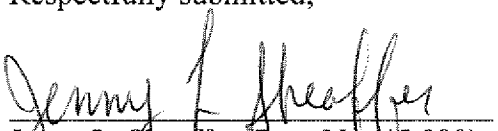
Independent claim 24 recites: "wherein said nanoparticles are comprised of said second monomer units and said first monomer units, in a ratio of said first monomer units to said second monomer units between 0.1:1 and 0.8:1." The prior art fails to disclose or teach that the ratio of first monomer units to the second monomer units of the claimed nanoparticles is between 0.1:1 and 0.8:1. This limitation is supported by the specification at page 7, lines 7-8. This ratio allows control of the size distribution of the nanoparticle, as taught by the specification in several places.

It is believed that claim 24 is patentable over the prior art, and dependent claims 25-31 also recite additional distinguishing features. For example, claim 26 is also patentable over the prior art because of the reasons discussed in section II of this Response.

V. Conclusion

For the foregoing reasons, the claims of this application are believed to be patentable over the prior art. In addition, the Final Office Action was clearly erroneous in that it failed to establish a *prima facie* case of unpatentability. Applicants respectfully request that the rejections be withdrawn and that this case be passed to issue.

Respectfully submitted,



Jenny L. Sheaffer (Reg. No. 45,099)
Jones Day
North Point, 901 Lakeside Avenue
Cleveland, Ohio 44114
(216) 586-7078